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WOOD WASTE RECLAMATION FACILITIES

SITING AND PERMITTING REQUIREMENTS

GUIDANCE # BWP-98-006

This document provides guidance to the regulated community on the Department of Environmental Protection's requirements for the siting and permitting of facilities that process wood waste through decomposition into loam/topsoil material.

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WOOD WASTE RECLAMATION FACILITIES

BUREAU OF WASTE PREVENTION

GUIDANCE # BWP-98-006

1.0 Statement of Intent

This guidance addresses the solid waste regulatory requirements for wood waste reclamation facilities. Wood waste reclamation facilities manage wood waste resulting from land clearing (stumps, branches, etc.) by consolidating these materials at dedicated locations and covering them with soil. After several years of passive decomposition the material is reclaimed as loam.

DEP will classify and regulate wood waste reclamation facilities operating under the terms of this guidance as solid waste handling facilities and not as landfills.

This guidance defines minimum performance and design standards and operation and maintenance requirements for wood waste reclamation facilities by supplementing and clarifying the provisions of 310 CMR 19.000, the "Solid Waste Management Facility Regulations".

2.0 Definitions

All terms used in this guidance shall have the meanings set forth in 310 CMR 19.000 unless the context clearly indicates another meaning.

The following two (2) definitions have been taken verbatim from the solid waste regulations and are repeated here for clarity in understanding this guidance.

> Handling Facility means any facility that is not a disposal facility, for example transfer stations, storage facilities and other facilities used primarily for the storage, processing or treatment of solid waste. ("Handling facility" includes recycling facilities and composting facilities that are required to obtain a site assignment pursuant to 310 CMR 16.05)
>
> Wood Waste means discarded material consisting of trees, stumps and brush, including but not limited to sawdust, chips, shavings and bark. Wood waste does not include new or used lumber or wood from construction and demolition waste and does not include wood pieces or particles containing or likely to contain asbestos, or chemical preservatives such as creosote or pentachlorophenol, or paints, stains or other coatings.

The Department adopts the following definitions for the purposes of this guidance.

Wood Waste Reclamation Facility means a solid waste handling facility engaged in the process of burying wood waste which passively decomposes for a number of years and then is excavated and processed to reclaim a soil/compost mixture.

Zone A means

(a) the land area between the surface water source and the upper boundary of the bank;
(b) the land area within a 400 foot lateral distance from the upper boundary of the bank of a Class A surface water source, as defined in 310 CMR 4.05(3)(a); and
(c) the land area within a 200 foot lateral distance from the upper boundary of the bank of a tributary or associated surface water body.

3.0 Applicability

This guidance clarifies the regulatory requirements concerning wood waste reclamation facilities, as defined above, by classifying said facilities as handling facilities within the meaning of M.G.L. c. 111, § 150A, the Site Assignment Regulations for Solid Waste Facilities at 310 CMR 16.00, and the Solid Waste Management Facility Regulations at 310 CMR 19.000. Wood waste reclamation facilities will not be considered landfills within the meaning of the Department's solid waste regulations provided they comply with this guidance. Furthermore, this guidance is not applicable to facilities that:

- process construction and demolition wastes, painted or treated wood of any kind or any other kind of solid waste;
- bury wood wastes but do not reclaim them; or
- process wood waste by means other than those defined herein. Operators who process wood waste by other means (e.g. chipping etc.) are subject to the regulatory requirements as defined by 310 CMR 16.05.

In accordance with 310 CMR 19.120(1)(b), the following wood waste disposal or handling operations are exempt from obtaining a DEP permit under 310 CMR 19.000 and this guidance provided that the operation incorporates good management practices and is done in a manner to minimize pollution to air, water or other natural resources of the Commonwealth:

- wood waste disposal or handling areas exempted from site assignment pursuant to 310 CMR 16.05(5)(d) (single family residence or farm); and
- other wood waste disposal areas which will contain a total volume of less than 200 cubic yards.

4.0 MEPA

New or expanded wood waste reclamation facilities that receive 50 tons or more per day of materials are subject to the Massachusetts Environmental Policy Act (MEPA) and are required to submit an Environmental Notification Form (ENF).

5.0 Site Assignment Requirements - 310 CMR 16.00

All wood waste reclamation facilities shall provide documentation, as part of any permit application submitted to the Department, that the facility has a valid site assignment in accordance with 310 CMR 16.00.

1. An existing facility must either have received site assignment from the local Board of Health (BOH) or demonstrate that the limits of the current operation are grandfathered in accordance with 16.02: Definitions - Site Assignment.
    - Operations at existing facilities are limited to the extent of the valid site assigned area.
2. A new facility, or an existing facility that cannot provide documentation of site assignment, must apply for site assignment as a handling facility in accordance with 310 CMR 16.00.
    - A new facility, or an existing facility without site assignment, is subject to the location restrictions of 16.40(3)(d) unless a waiver from those requirements is requested by the applicant and granted by the Department.
3. Facilities previously assigned by the Board of Health (BOH) specifically as landfills shall be considered adequately site assigned as handling facilities.

6.0 Permit Application Requirements - 310 CMR 19.000

General Requirements. All wood waste reclamation facilities must have a valid facility permit issued in accordance with 310 CMR 19.000 and this guidance.

1. Existing Facilities
    a. An existing facility with a currently valid permit may continue to operate in accordance with its current permit provided a written notice is submitted to the Department stating that intention **within sixty (60) days of notice by the Department**. Based on a review of the record and other information the Department may provide notice to the facility that modification to the facility's operation is needed to comply with the regulations and this guidance.
    b. An existing facility that had a prior permit or approval from the Department as a wood waste landfill may apply for reclassification as a wood waste reclamation facility by filing an application for a permit modification (BWP SW 07 or BWP SW 21). That application shall include information that documents how the facility

will comply with the regulations and this guidance.

c. An existing facility that does not have a prior permit or plan approval from the Department shall apply for a solid waste management facility permit (BWP SW 05 or BWP SW 19) for a new handling facility in accordance with the regulations and this guidance.

2. New Facilities. Any person intending to construct, operate or maintain a new wood waste reclamation facility shall apply for a solid waste management facility permit for a new handling facility (BWP SW 05 or BWP SW 19) in accordance with the regulations and this guidance prior to commencing operations.

Facility Plan. An application for a new, expanded or existing wood waste reclamation facility permit shall be submitted in accordance with 19.030 and contain the following information.

1. A **locus map**. U.S.G.S. topographic or equivalent.
2. A **site plan** showing all geographical features within 500 feet of the site which (at a minimum) identifies the following:
   a. all items specified under 310 CMR 19.030(3)(c)(1) and 310 CMR 19.104(2);
   b. a description of the limits of site assignment;
   c. all areas of deposition (existing and proposed); and
   d. the location of stockpiles following reclamation.
3. A **hydrogeological study** that provides the data, maps, cross-sections, schematics and numerical parameters which the Department reasonably deems necessary to accurately determine the potential for ground water or surface water contamination from the site.
4. A **facility design plan**. See 19.030(3)(c)3.
   a. Deposition of wood waste should not be within five (5) feet of the maximum seasonal high groundwater table elevation.
   b. A groundwater protection system is not a design requirement for these facilities.
5. An **operation and maintenance plan** that demonstrates compliance with 310 CMR 19.030(3)(c)4, except 4.d., and which addresses the following.
   a. Depth of wood waste placement. It is recommended that wood waste should not exceed a depth of 45 feet. At depths greater than 25 feet the operator should address the issue of providing adequate air infiltration throughout the fill. Vents placed every 100-200 feet on center is one method to promote air infiltration.
   b. Interment period. All wood waste should be processed within 5-7 years after placement. Any wood waste that can not be reclaimed for its intended end use at that time may be reburied with new material being received at the facility.
   c. Placement methods. The development and progression of the site should be established such that the entire site, once completed, may be reclaimed at a later date. The horizontal and vertical limits of the wood waste must be identified. Documentation shall be presented that the operating size of the site is manageable based on operational procedures (i.e. fill rate, reclamation rate, etc.) to be employed and equipment used at the facility.
   d. Reclamation methods. A detailed reclamation plan should be included which specifies the length of time required for decomposition, procedures used for

monitoring the wood waste for the time between placement and excavation, reclamation method(s) to be employed and the end use(s) of reclaimed materials.

e. Property boundary setbacks.

New or expanded facility. Wood waste shall not be placed within 100 feet of the property boundary for a new or expanded wood waste facility.

Existing facility.

- For an existing facility the preferred setback distance is 100 feet. This setback distance may be reduced based on site specific considerations including:
  - Site size. Generally sites of less than 5 acres do not need 100 foot setbacks; and,
  - Abutting site use. Where a facility abuts a roadway or the owner owns adjacent parcels would be examples of situations allowing reduced setbacks.
- In all situations adequate access around the site for maintenance or accessibility during a fire must be provided. Generally, a 25 foot wide buffer would be the allowable minimum.
- Where an existing facility has placed wood waste closer than the required distance, the setback should be increased to the approved distance as the site is reclaimed. The facility plan should indicate how the setback is to be reached and the time frame for accomplishing this.

f. Processing setbacks. Processing of wood waste, such as grinding or screening activities, either before placement or after excavation, should be located at least 500 feet from any occupied residential dwelling, prison, bedded health care facility, educational institution (grades k-12), or children's preschool. The applicant should demonstrate that 500 feet will be an adequate setback distance to prevent nuisance conditions from occurring.

- The Department may allow a reduction in this distance if the applicant can provide documentation that nuisance conditions, such as dust and noise, will not occur because of specific operating procedures or other control measures.
- At both new and existing facilities the applicant should give consideration to using nuisance abatement measures including berms, screening/fencing, noise suppression equipment, working below grade and seasonal operation.

g. A storm water control/management plan (19.115).

h. A fire control safety plan (19.104(5)(f)1.).

i. A dust, odor and noise control plan.

- Applicants should furnish detailed dust control measures which will be incorporated into all operations at the site (placement, excavation, grinding, screening, traffic, etc.) and for all seasons and weather conditions. Considerations should be given to using water spray for excavation/processing, maintaining vegetation on filled areas and reducing dust generation on heavily trafficked areas.

j. Other Operation and Maintenance (O+M). A narrative description of how the facility will comply with general operation and maintenance requirements, as outlined at 310 CMR 19.130, with the following exceptions, should be provided.

- Omit the following sections of 310 CMR 19.130: (9),(14),(28),(29),(30),(31),(32).
- Replace section 19.130(15) in its entirety and substitute the following:
  - 19.130(15) - Cover Material. A discussion should be presented relative to all types and amounts of cover materials to be utilized specific to facility operations.
- Annual reports identified by section 19.130(34)(d) should be submitted on a form as provided by the Department and submitted to the Department no later than February 15th of each calendar year.
- Inspections identified by section 19.130(35) should be conducted, at a minimum, bimonthly (every 2 months) unless another frequency is approved by the Department in writing.

6. A **groundwater monitoring program** which (at a minimum) establishes one (1) upgradient and three (3) downgradient groundwater monitoring wells or clusters. For sites 5 acres or less in size the Department will consider reducing the number of downgradient wells based on site specifics. At a minimum all sites should have at least one (1) upgradient and one (1) downgradient well. The monitoring requirements should include the following.

a. A monitoring plan should address sample collection, sample preservation and shipment, analytical procedures, chain of custody control and sample collection and analytical quality assurance/quality control ("QA/QC"). All analyses shall be conducted by a Massachusetts certified laboratory and done in accordance with methods approved by the Department. All analytical results shall be submitted to the Department within sixty (60) days after the scheduled sampling period. See 19.118(1) and (2), and 19.132(1)(a)-(g).

b. At a minimum, groundwater samples should be analyzed for the parameters and at the frequency as listed in the appendix of this guidance titled "Groundwater Monitoring".

c. If the concentrations of any of the parameters sampled exceed the state or federal drinking water standards, Maximum Contaminant Levels (MCLs) or alternative standards established in a permit; or guidelines or standards established by a permit, order or authorization issued by the Department for contaminants for which no federal or state standards exist, at any sampling point, the owner/operator shall notify the Department within 14 days of the finding.

7. A **closure/post-closure plan** shall comply with 19.030(3)(c)5 and include the following.

a. The closure plan for a wood waste reclamation facility should include a description of how all the materials are to be excavated, reclaimed and removed from the site upon closure of the facility as a wood waste reclamation facility.

b. A post-closure plan should include a description of the methods that will be used to determine that there are no adverse residual effects remaining on-site from

the operation, such as contamination in the soils. This plan should also include any provisions needed to monitor and care for the site after closure.
Note: Any wood waste reclamation facility that fails to remove all waste from the site after it has closed will be classified as a wood waste landfill. Accordingly, closure of any such wood waste landfill will be subject to the requirements for a wood waste landfill closure, including the need to do a landfill assessment in accordance with 19.150.

7.0 Financial Assurance Requirements

Wood waste reclamation facilities shall be required to maintain a financial assurance mechanism (FAM) to cover the cost of securing closure for the facility as identified in its closure plan. See 310 CMR 19.051.

1. A detailed cost estimate for closing the facility shall be provided as the basis for determining the amount required for a FAM.
2. If the facility's closure plan includes reclamation of material as part of closure, then the amount of the FAM can be reduced by the fair market value (FMV) of the materials expected to be reclaimed during removal. For purposes of estimating the FMV, the expected amount of reclaimed marketable material cannot exceed 50% of the total volume of wood waste in place at the facility. The FMV must be demonstrated based upon current sales information.

8.0 Permit Review

Permit applications shall be reviewed by the Department in accordance with the criteria for handling facilities as specified in 310 CMR 19.038.

1. Existing wood waste reclamation facilities shall comply with 19.038(2)(a) 1 through 10. In addition, the criteria listed below should also be applied when evaluating an existing wood waste reclamation facility permit application.
    a. The waste handling area of an existing wood waste reclamation facility that is located within a Interim Wellhead Protection Area (IWPA), Zone II of an existing or a potential public water supply, is within 250 feet of a private water supply well, or is in a Zone A will be reviewed on a case by case basis.
    b. The applicant must provide documentation that operation of a wood waste facility within these locations will not result in an adverse impact to an existing public or private water supply. In addition to the information provided by the hydrogeological study required in the facility plan application section (see section 6.0), documentation should also include the following:
        • description of all drinking water wells within distances described above, including general construction, depth and pumping rate of the well;

- quality of water in wells located within the locations listed above, with special focus on taste and odor characteristics. Analytical results should be provided where available; and
- operating history which provides information on length of time the facility has been operating, types and quantities of material received during its operating life, depth of fill, depth to groundwater and reclamation frequency.

2. New wood waste reclamation facilities shall comply with 19.038(2)(a) 1 through 10 and (b).

9.0 Limitations

The Department reserves the right to modify this guidance should information become available that:

1. the operation of wood waste reclamation facilities has caused or is likely to cause adverse environmental impacts justifying additional requirements on or for these facilities; or
2. the operation of these facilities has not resulted in adverse environmental impacts and therefore reducing specific regulatory requirements for these facilities would continue to provide an appropriate level of protection.

10.0 Background

A long-standing practice for managing wood waste (stumps, branches, etc.) resulting from land clearing has been to consolidate these materials at dedicated locations and cover them with soil. After several years of passive decomposition the material may be reclaimed as loam. These facilities can operate indefinitely in a fixed area, replacing recovered loam with new wood waste. The term wood waste reclamation facility (WWRF) is used to describe this type of activity.

In the past these facilities have been classified as solid waste landfills because waste has been buried for long periods of time and, if abandoned, was indistinguishable from a landfill or dumping ground. This classification did not, however, adequately acknowledge that there are a significant number of operators who recover the decomposed material and market it as a valuable product (loam). In addition, while the decomposition of wood waste resembles the biological activity which occurs in composting, DEP's regulatory definition of composting requires the "accelerated biodegradation" of waste rather than the passive decomposition associated with wood waste reclamation practices. Therefore, DEP decided it was not appropriate to classify this type of activity as a composting facility.

DEP still considers the management of wood waste as described above to be a solid waste activity and will continue to regulate these operations as solid waste management facilities because of the potential for adverse environmental impacts if wood wastes are not properly managed. These problems may include fires, nuisance conditions (dust, noise etc.) and the possibility of groundwater impacts (such as taste, odor and color) resulting from pH changes or the leaching of dissolved organic materials such as tanins. However, DEP has decided to distinguish this reuse activity as different from landfilling or active composting operations. Therefore, DEP has decided to classify wood waste reclamation operations as solid waste handling facilities.

Appendix
Groundwater Monitoring

PARAMETERS

- **Indicators:**

pH (in situ)	Sulfate/Sulfide
Temperature (in situ)	Nitrate/Nitrogen
Specific Conductance (in situ)	Chloride
Dissolved Oxygen (in situ)	Manganese
Total Dissolved Solids	Iron
Chemical Oxygen Demand	Alkalinity
Total Organic Carbon	Lignin-Tannin
Total Kjeldahl Nitrogen	Color

- **Total Metals:**

Arsenic	Selenium
Barium	Silver
Cadmium	Copper
Chromium	Cyanide
Lead	Zinc
Mercury	

- **Volatile Organic Compounds ("VOCs")** - EPA Method 8260 or equivalent.

- **Polynuclear Aromatic Hydrocarbons ("PAHs")** - EPA Method 8100 or equivalent.

- **Other parameters,** such as 3-Isopropyl, 2-Methoxy-Pyrazine (IPMP), may be required based on site specifics.

- **Note:** If there is past evidence of construction and demolition debris disposal at the site, the parameter list shall be amended to include Formaldehyde and Semi-Volatile Organic Compounds.

- **Note:** If no C&D Debris has been disposed, then the Total Metals, VOCs and PAHs may be reduced after four (4) consecutive quarterly rounds of sampling.

SAMPLING FREQUENCY

- Groundwater samples should initially be sampled at a frequency of four (4) times a year (quarterly).

- Sampling frequency may be reduced to semi-annually, or some other frequency, after one year of quarterly sampling has been completed.

- For smaller sites (generally less than 5 acres) the Department may approve only one round of sampling per year as determined on a case by case basis.

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